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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,497	12/01/2004	Masahiro Goto	123767	4945
25944 7590 04/06/2007 OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER DO, ROBERT C	
			ART UNIT	PAPER NUMBER
			2851	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/516,497

Applicant(s)

GOTO, MASAHIRO

Examiner

Robert C. Do

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 10-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 – 9 have been considered but are moot in view of the new ground(s) of rejection.

Election/Restrictions

2. In view of Applicants arguments filed 12/29/2006, traversing the restriction requirement of Claims 18 and 19 set forth in the office action dated 7/6/2006, the restriction requirement is hereby withdrawn.
3. Applicant's election with traverse of claims 10 – 17 in the reply filed on 12/29/2006 is acknowledged. The traversal is on the ground(s) that the search for one species encompasses the other species and that it is not a burden. This is not found persuasive because the search for concavities on a screen does not encompass a search for protrusions on a screen and that searching for the concavities would be a burden that would require additional searching in different areas. Therefore claims 10 – 17 are still withdrawn.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 6, 18, and 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plummer (US 3,718,078) in view of Tachibana et al. (US 5,410,006).

6. Regarding Claims 1, 18, and 19, Plummer discloses an optical element (Fig. 5, 12) that changes an optical path of incident light, the optical element being formed on at least one of the planes of incidence (Right Side of Fresnel Lens in Fig. 5) and emergence (Left Side of Fresnel Lens in Fig. 5), wherein a predetermined part of the optical member, selected from the planes of incidence (Right Side of Fresnel Lens in Fig. 5) and emergence (Left Side of Fresnel Lens in Fig. 5), has a plurality of minute concavities (14) by which reflection of light incident on the predetermined part is prevented, and the mold having formed thereon a plurality of minute protrusions in a shape that is a reverse of a shape of the plurality of minute concavities. (See Abstract describing that a mold can be made in the shape opposite of the Fresnel lens so duplicates can be made in large number)

Plummer does not disclose wherein the optical member is formed by casting a molding resin upon a surface of a mold and by curing the molding resin.

However, Tachibana et al. discloses wherein the optical member is formed by casting a molding resin upon a surface of a mold and by curing the molding resin. (Figs. 2(a) – 2(c) and Column 6, lines 30 – 50 disclosing the process)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Fresnel lens with minute concavities of Plummer with the mold with minute protrusions of Plummer using the curing molding

resin method of making Fresnel lenses of Tachibana et al. for the purpose of having more durable screens made out of the resin instead of the glass of Plummer.

7. Regarding Claim 6, Plummer discloses the optical member contains plurality of minute protrusions in addition to the plurality of minute concavities. (See Fig. 5 showing protrusions in between the concavities).

8. Claims 2 – 4 and 7 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plummer (US 3,718,078) and Tachibana et al. (US 5,410,006) in view of Ono (Japanese Patent Publication Number 2002-169225).

9. Regarding Claim 2, Plummer and Tachibana et al. disclosures have been disclosed above.

Plummer and Tachibana et al. do not disclose wherein the concavities have a mean depth of .05 μm or more and .5 μm or less, and a mean distance between neighboring two of the concavities is not more than .5 μm .

However, Ono discloses wherein the concavities have a mean depth of .05 μm or more and .5 μm or less (Paragraph [0010], line 6), and a mean distance between neighboring two of the concavities is not more than .5 μm (Paragraph [0010], lines 4-6).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the concavities of Plummer to have a mean depth of .05 μm or more and .5 μm or less as taught by Ono for the purpose of diffusing incoming light incident on the Fresnel lens better than Fresnel lenses with larger concavities giving the screen a wider viewing angle.

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10. Regarding Claim 3, Plummer and Tachibana et al. disclosures have been disclosed above.

Plummer and Tachibana et al. do not disclose wherein the concavities have a mean radius in a direction of plane .5 to 2 times the mean depth of the concavities.

However, Ono discloses wherein the concavities have a mean radius in a direction of plane .5 to 2 times the mean depth of the concavities (Paragraph [0011], line 22 shows a range for the radius as .005 - .1 μm and Paragraph [0010], lines 6 shows a range for the depth as .05 - .2 μm ; Therefore it can be shown that a radius of .1 μm and a depth of .1 μm gives a ratio where the radius is 1 times the depth which is in the claimed range of .5 to 2 times).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the concavities of Plummer to have a mean radius in a direction of plane .5 to 2 times the mean depth of the concavities as taught by Ono for the purpose diffusing incoming light incident on the Fresnel lens better than Fresnel lenses with larger concavities giving the screen a wider viewing angle.

11. Regarding Claim 4, Plummer and Tachibana et al. disclosures have been disclosed above.

Plummer and Tachibana et al. do not disclose wherein the concavities have a mean depth that is .2 to 2 times the mean distance between neighboring two of the concavities.

However, Ono discloses wherein The concavities have a mean depth that is .2 to 2 times the mean distance between neighboring two of the concavities (Paragraph

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[0010], line 6 shows a range for the depth as $.05 - .2 \mu\text{m}$ and Paragraph [0010] lines 4-6 show that the distance can range from $.2 - .9 \mu\text{m}$; Therefore it can be shown that a depth of $.2 \mu\text{m}$ and a distance of $.2 \mu\text{m}$ would give us a ratio where the depth is 1 times the distance which is in the claimed range of .2 to 2 times).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the concavities of Plummer to have a mean depth that is .2 to 2 times the mean distance between neighboring two of the concavities as taught by Ono for the purpose of diffusing incoming light incident on the Fresnel lens better than Fresnel lenses with larger concavities giving the screen a wider viewing angle.

12. Regarding Claim 7, Plummer and Tachibana et al. disclosures have been disclosed above.

Plummer and Tachibana et al. do not disclose wherein the optical member where it is used for the purpose of a projection screen (Paragraph [0002], line 8).

However, Ono discloses wherein the optical member where it is used for the purpose of a projection screen (Paragraph [0002], line 8).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the Fresnel lens of Plummer into a projection screen as taught by Ono for the purpose of paralleling the light from the projector to see moving images upon it.

13. Regarding Claim 8, Plummer discloses wherein the optical element where incident light is allowed to follow optical paths approximately parallel to one another (Incident light that follows optical paths that are approximately parallel to one another is

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an inherent quality of a Fresnel lens which is the invention of Plummer, see previously attached in the action dated 7/6/2006 "The Fresnel Lens" article).

14. Regarding Claim 9, Plummer discloses wherein the optical element where incident light is allowed to follow dispersed optical paths. (See abstract of Plummer)

15. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plummer (US 3,718,078) and Tachibana et al. (US 5,410,006) in view of Ono (Japanese Patent Publication Number 2002-169225) further in view of van den Ven (US 5,005,945).

Plummer and Tachibana in view of Ono teaches all the claimed parts of the claimed invention as show above.

Plummer and Tachibana in view of Ono does not teach of an optical member where a laminar portion including with the concavities has a percentage of void of 20 to 50%.

However van de Ven teaches of an optical member that has concavities where the percentage of void is 20 to 50% (Fig. 2, 3, 4 and 5 show a screen with concavities and also show a width of b and height of h2 and h1. From that we can determine that the void of the screen is within 20 to 50%).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make screen of Ono have concavities where it has a percentage of void between 20 to 50% in order to control the amount of incident light reflected back.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Do whose telephone number is (571)272-1387. The examiner can normally be reached on Monday Through Friday, 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCD

Rodney Fuller
Primary Examiner

